SINGLE COUNT 2

You are to do the next progress test (Single count 1.2) on the topics

Types of programming language, translators and integrated development environments + CH4 PC

- Revision
- Single Count 2

COMPUTER SCIENCE

ALGORITHM IN PSEUDOCODE

Standard Methods Of Solution

Totaling, Counting, Maximum, Minimum, Average

STARTER

KNOWING WHAT YOU KNOW

Go to:

https://joinmyquiz.com

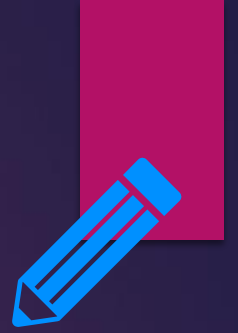
- You are to write your real name and grade.
- Example: Nguyen Do Thy 10G5

LESSON OBJECTIVES

Students should be able to:

- Do Pseudocodes for sample problems
- Understand Pseudocode for standard methods of solution
- Understand pseudocode solution for Totalling, Counting, Maximum, Minimum

Pseudocode



Write pseudo code that reads in three numbers and Print them all in sorted order.

Pseudocode

Write pseudo code that reads in three numbers and Print them all in sorted order.

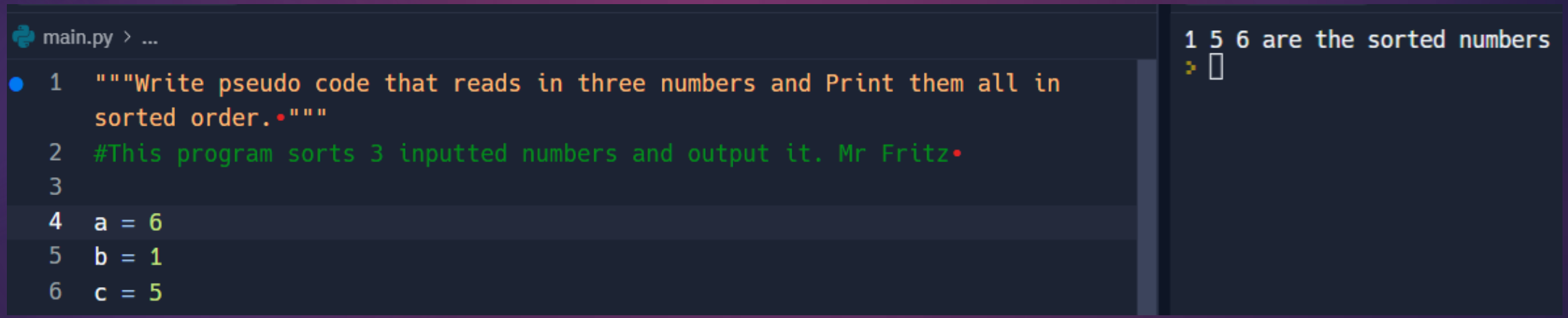
main.py > ...

```
1  """Write pseudo code that reads in three numbers and Print them all in
   sorted order."""
2  #This program sorts 3 inputted numbers and output it. Mr Fritz
3
4  a = 3
5  b = 1
6  c = 5
```

```
1 3 5 are the sorted numbers
```

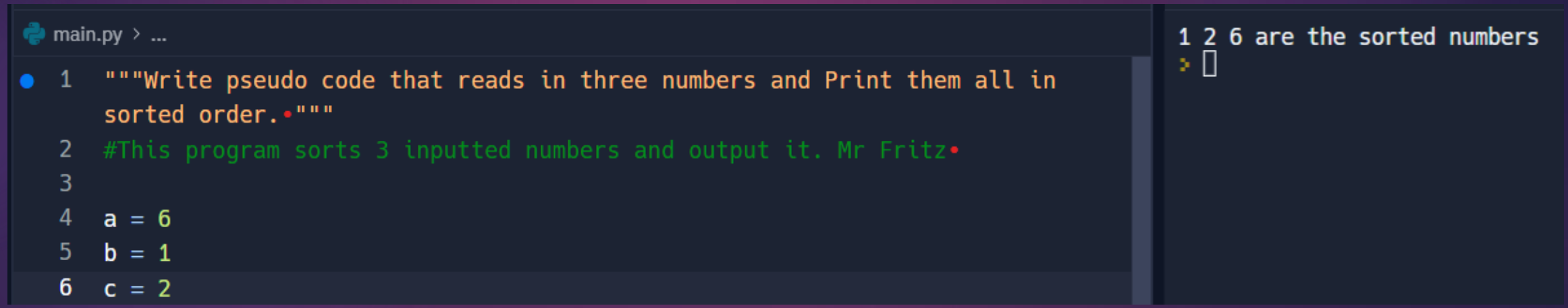
Pseudocode

Write pseudo code that reads in three numbers and Print them all in sorted order.



Pseudocode

Write pseudo code that reads in three numbers and Print them all in sorted order.



Pseudocode

Write pseudo code that reads in three numbers and Print them all in sorted order.

```
INPUT Num1, Num2, Num3
IF Num1 < Num 2
    IF Num2 < Num3
        Print Num1, Num2, Num3
        ELSE
         IF Num3 < Num1
              Print Num3, Num2, Num1
              ELSE
              Print Num1, Num3, Num2
ELSE
```

```
    IF Num1 < Num 3
        Print Num2, Num1, Num3
        ELSE
         IF Num3 < Num2
              Print Num3, Num2, Num1
              ELSE
              Print Num2, Num3, Num1
          ENDIF
      ENDIF
          ENDIF
      ENDIF
ENDIF
```

Python Codes

Write pseudo code that reads in three numbers and Print them all in sorted order.

main.py

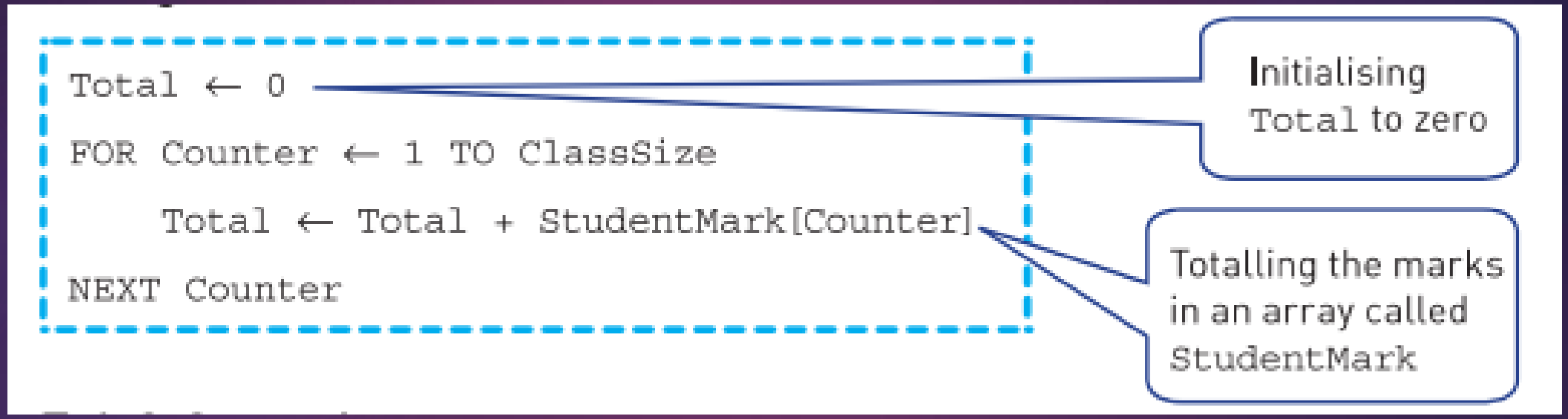
```python
#This program sorts 3 inputted numbers and output it. Mr Fritz

a = 3
b = 1
c = 5
if a < b:
  if b < c:
    print (a, b, c, "are the sorted numbers")
  else :
    if c < a:
      print (c, b, a, "are the sorted numbers")
    else :
     print (a, c, b, "are the sorted numbers")
else:
  if a < c:
    print (b, a, c, "are the sorted numbers")
  else:
    if c < b:
      print (c, b, a, "are the sorted numbers")
    else:
      print (b, c, a, "are the sorted numbers")

```

Standard Methods used in Algorithm

- Totalling
- Counting
- Finding Maximum, Minimum, and Average
- Searching using a Linear search
- Sorting using Bubble Sort

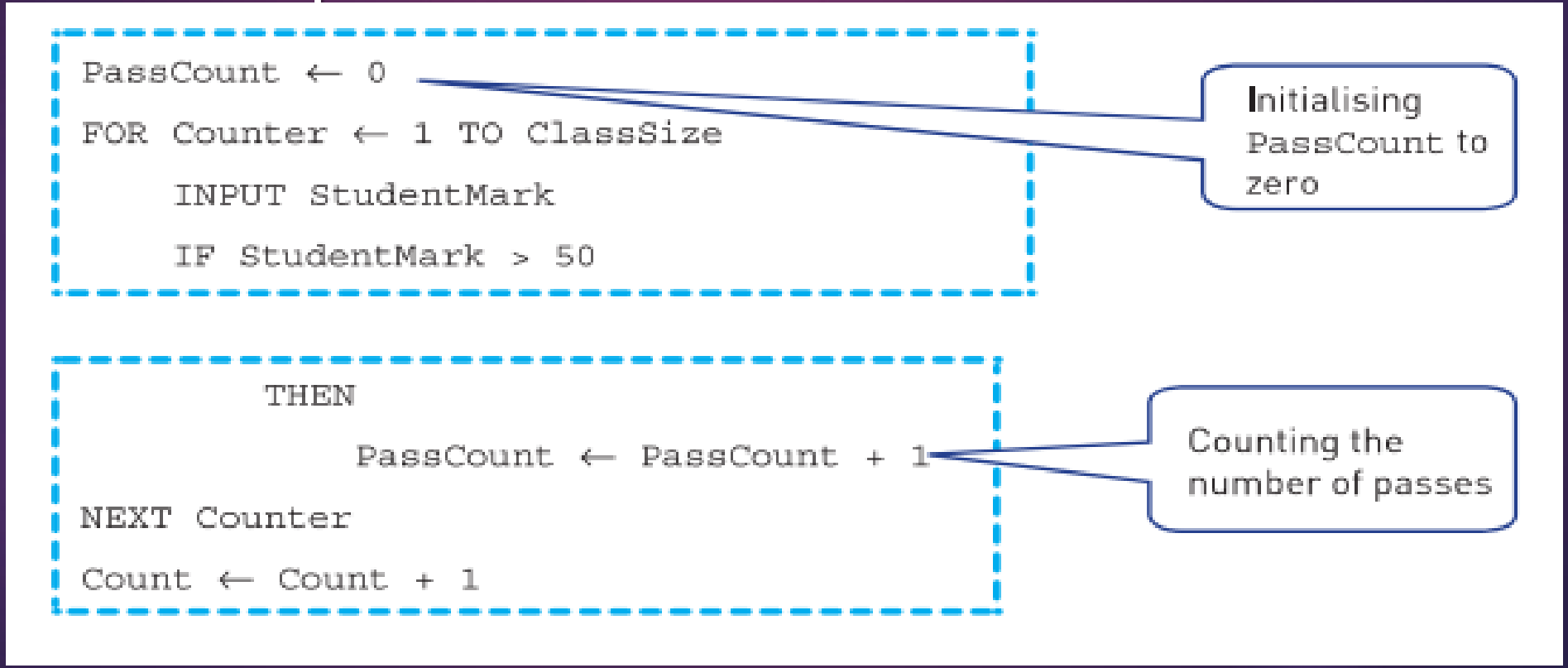
TOTALING

- Means, keeping total that values are added to.



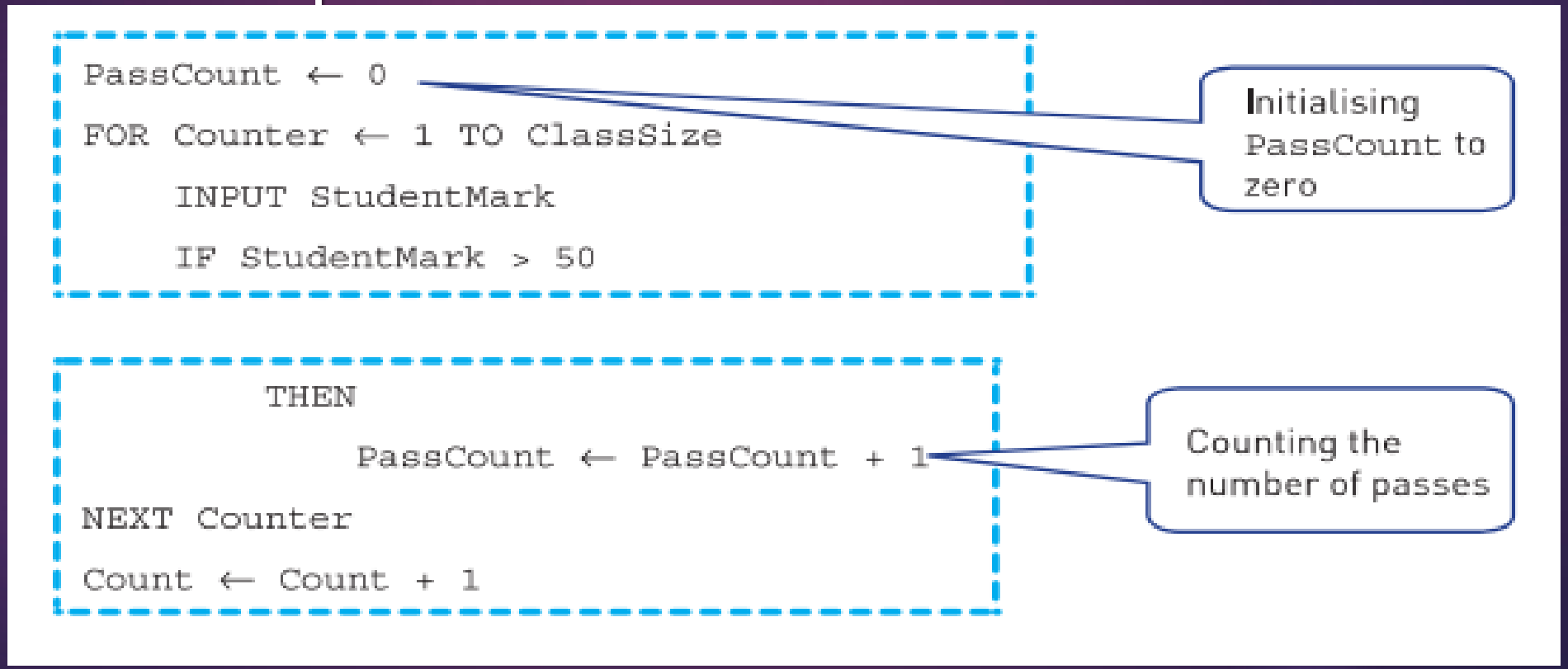
COUNTING

- Keeping a count of the number of times an action is performed



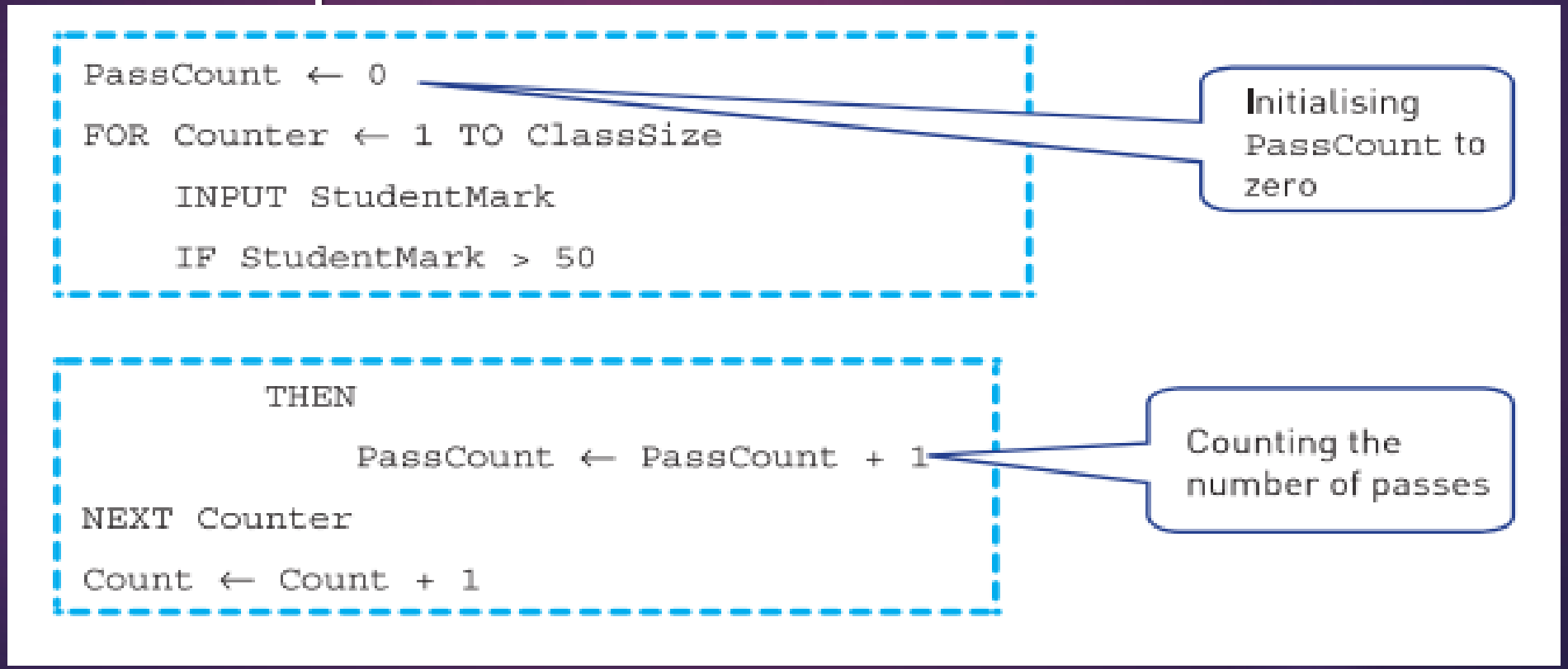
COUNTING

- Keeping a count of the number of times an action is performed



COUNTING (Adding)

- Keeping a count of the number of times an action is performed



COUNTING (Subtracting)

- Counting is also used to countdown until a certain value is reached. Example code snippet:

```
:
NumberInStock ← NumberInStock - 1
IF NumberInStock < 20
     THEN
          CALL Reorder()
:
```

Counting down items in stock

Maximum, Minimum, and Average

- Finding the largest and smallest value in the list a two standard methods that are frequently used in an algorithm.
- Example: Finding the highest and lowest mark awarded to a class of students.

mark awarded to a class of students.

```
MaximumMark ← 0
MinimumMark ← 100
FOR Counter ← 1 TO ClassSize
  IF StudentMark[Counter] > MaximumMark
    THEN
      MaximumMark ← StudentMark[Counter]
  ENDIF
  IF StudentMark[Counter] < MinimumMark
    THEN
      MinimumMark ← StudentMark[Counter]
  ENDIF
NEXT Counter
```

Initialising maximum to the lowest mark possible

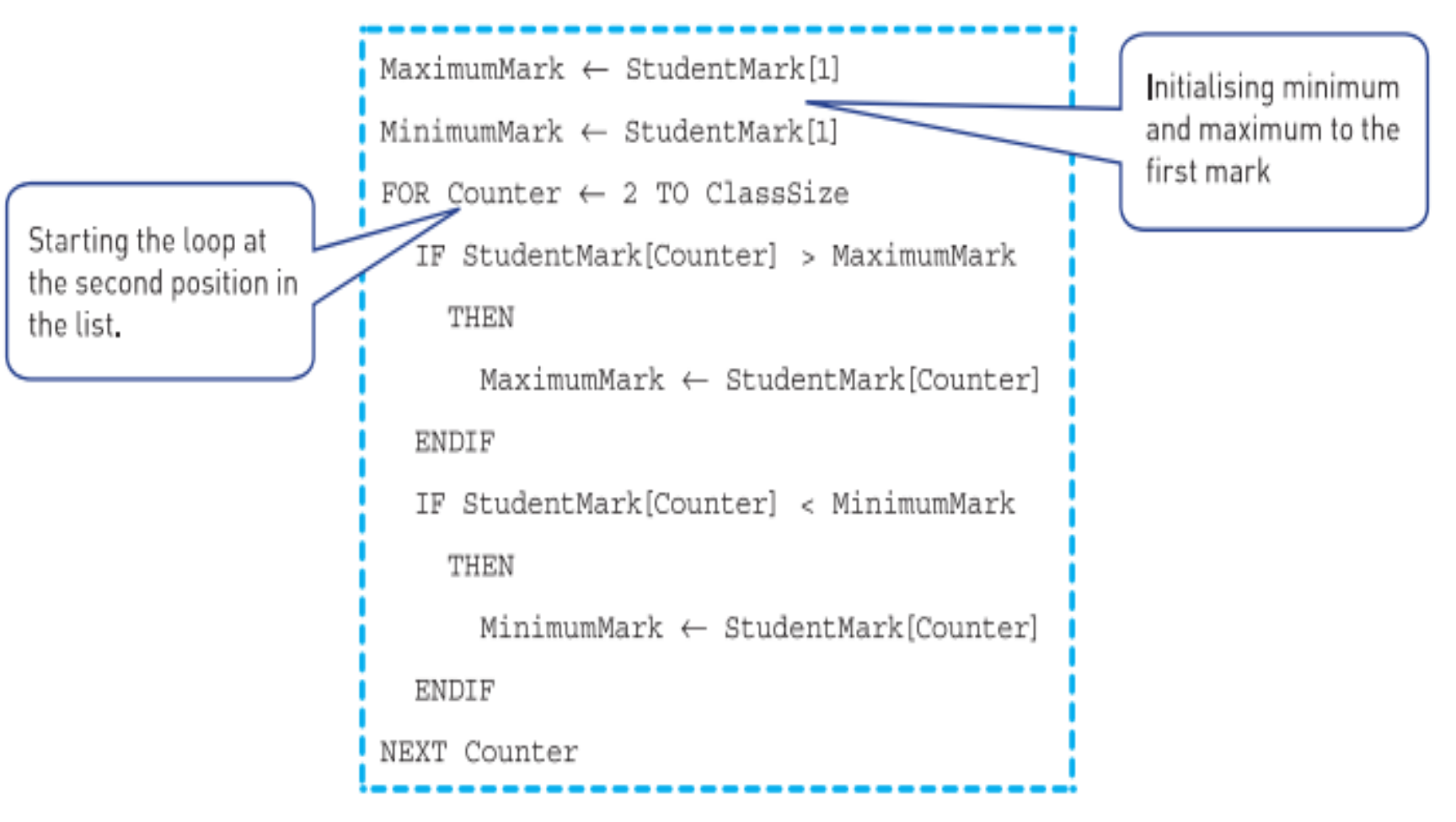
Calls data from an array called StudentMark)

Initialising minimum to the highest possible

Replacing the maximum mark with a higher mark

Replacing the minimum mark with a lower mark

Maximum, Minimum, and Average



- Example: Finding the highest and lowest mark awarded to a class of students. If the largest and smallest values are not known, set the maximum and minimum values to the first item on the list.

Maximum, Minimum, and Average

- Calculating the average (mean) of all the values is an extension of the totalling method.
- Example: Calculating the average mark of a class of students.

```
Total ← 0
FOR Counter ← 1 TO ClassSize
  Total ← Total + StudentMark[Counter]
NEXT Counter
Average ← Total / ClassSize
```

Calculating the average from the total after the loop has been completed

PLENARY

KNOWING WHAT YOU LEARNED

Go to:

https://joinmyquiz.com

- You are to write your real name and grade.
- Example: Nguyen Do Thy 10G5

COMPUTER SCIENCE

Let me know about your learning by doing the reflection and support survey on my website

https://www.febstar.com

THANK YOU

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